

**FEDERAL TRANSIT ADMINISTRATION**  
**PROJECT MANAGEMENT OVERSIGHT PROGRAM**

**Contract No. DTFT60-04-D-00013**  
**Project No. DC-27-5041**  
**Task Order No. 10**

**CLIN 0005: Spot Report**  
**Spot Report #2 – Readiness Report**

**Grantee: City and County of Honolulu**

**Honolulu High-Capacity Transit Corridor**  
**Project**

**Spot Report #2 – Readiness Report**  
**DRAFT - May 16, 2008**

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## LIST OF ACRONYMS

AA	Alternatives Analysis
Booz Allen	Booz Allen Hamilton
BFMP	Bus Fleet Management Plan
DB	Design/Build
DEIS	Draft Environmental Impact Statement
DTS	City & County of Honolulu Dept. of Transportation Services
EIS	Environmental Impact Statement
FD	Final Design
FEIS	Final Environmental Impact Statement
FFGA	Full Funding Grant Agreement
FLSC	Fire/Life Safety Committee
FTA	Federal Transit Administration
GEC	General Engineering Consultant
GET	General Excise Tax
HHCTC	Honolulu High-Capacity Transit Corridor (Project)
HDOT	State of Hawai'i Department of Transportation
LPA	Locally Preferred Alternative
MOS	Minimum Operating Segment
NEPA	National Environmental Policy Act
NTP	Notice to Proceed
PB	PB Americas, Inc.
PBQD	Parsons Brinckerhoff Quade & Douglas, Inc.
PE	Preliminary Engineering
PMO	Project Management Oversight
PMOC	Project Management Oversight Contractor
PMP	Project Management Plan
PMSC	Project Management Support Consultant
QA/QC	Quality Assurance / Quality Control
QMP	Quality Management Plan
RAMP	Real Estate and Acquisition Management Plan
RFI	Request for Information
RFQ	Request for Qualifications
ROD	Record of Decision
ROW	Right-of-Way
RTD	DTS Rapid Transit Division
SCC	Standard Cost Category
SSCP	Safety and Security Certification Plan
SSMP	Safety and Security Management Plan
SSOA	State Safety Oversight Agency
SSOO	State Safety Oversight Office
SSORC	Safety and Security Oversight and Review Committee
SSPP	Safety and Security Program Plan
SSWG	Safety and Security Working Group
TOD	Transit Oriented Development
UH	University of Hawai'i
YOE	Year of Expenditure

## **1. INTRODUCTION**

Report Date	Draft - May 16, 2008
Project Name / Location	Honolulu High-Capacity Transit Corridor Project Honolulu, Hawaii
Project Sponsor	City and County of Honolulu
Project Management Oversight Contractor (PMOC) firm	Booz Allen Hamilton (Booz Allen)
Person (and affiliation if different from PMOC firm) providing this report	Justine Belizaire, with input from Frank McCarron, Scott Kiefer, Robert Mowry, John Simon, John Gutierrez, Laura Cham, Margie Newman (H.C. Peck) and Gary Touryan (PACO)
Length of time PMOC has been assigned to this project:	Booz Allen has been assigned for 12 months. Justine Belizaire has been assigned for 12 months.
Date when project sponsor's cost estimate was prepared:	October 23, 2006
Date shown on project sponsor's Standard Cost Category (SCC) worksheets:	October 23, 2006



## **2. EXECUTIVE SUMMARY**

This report documents 1) the Project Management Oversight Contractor's (PMOC) review of the technical capacity and capability of the City and County of Honolulu (City) to enter into Preliminary Engineering (PE) for the Honolulu High-Capacity Transit Corridor (HHCTC) Project in accordance with the Federal Transit Administration (FTA) New Starts requirements; and, 2) the overall project status.

### **Technical Capacity and Capability**

Before entering PE, FTA requires projects to complete the appropriate steps in the areas of transportation planning, financial management and technical capacity and capability. This report addresses the City's technical capacity and capability to enter and effectively implement PE of the HHCTC Project. The PMOC has evaluated the project development and the submission of documents necessary for entry into PE. These evaluations form the basis for the PMOC's opinion regarding the City's technical capacity and capability to enter PE.

*It is the PMOC's professional opinion that the City has demonstrated the technical capacity and capability to enter the PE phase of the project.*

### **Project Status**

The final Alternatives Analysis (AA) Report on the LPA has been completed and accepted by FTA and the DEIS is in the preliminary stages of development. The project guideway and station locations are being finalized, however structural alternatives for the guideway and stations are still being evaluated in order to further define the scope of project. An updated cost estimate is anticipated in October 2008 following completion of the DEIS by the City. The project schedule is also in the preliminary stages of development.

*Based on meetings and workshops with the City management and staff, documentation reviews, and site visits and tours, the PMOC recommends that the City be granted entry into PE in order to continue the development of the project scope, cost and schedule.*

### **Next Steps**

Going forward, the PMOC recommends the following items continue to be monitored as the project moves into PE:

- Technology selection progress, including City Council and local transit opponents' actions.
- Update of the PMP to include the proposed Transit Authority, if approved, including scope of authority and roles and responsibilities of key staff positions.
- Further definition of the project scope, final alignment, maintenance yard location, station locations and support facilities.
- Evaluation and development of the project delivery approach and methods for the

procurement of utility, facility and system contracts.

- Implementation and update of the RAMP, SSMP and QMP as the project progresses.
- Third-party negotiations and agreements for utility relocations.
- Development of the Project Master Schedule and progress of activities.

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### **3. PROJECT HISTORY**

The Honolulu High-Capacity Transit Corridor (HHCTC) Project is a twenty-nine (29) mile elevated fixed guideway system along O'ahu's south shore between Kapolei and the University of Hawai'i (UH) at Mānoa, including a spur to Waikīkī. The proposed "First Project" constitutes the minimum operating segment (MOS) and is a 20-mile route between East Kapolei and Ala Moana Center via Salt Lake Boulevard. The proposed "First Project" will have 19 stations, with an initial fleet size that is anticipated to be 66 vehicles.

The "First Project" is divided into two Phases. Phase I is approximately 6 miles long and includes 6 stations. The proposed limits of Phase I are from the future site of the Kroc Center development at North-South Road to the vicinity of Waipahu. Phase II encompasses the remaining 14 miles and 13 stations.

In 1968, the O'ahu Transportation Plan recommended a rail system with a 1980 horizon year. In 1972, Phase I of a Preliminary Engineering Evaluation Program for a rapid transit system between Pearl City and Hawai'i Kai was completed, and Phase II, which included an analysis of alternatives, was completed in 1976. A Final Environmental Impact Statement (FEIS) was finalized in 1982.

In 1990, Alternative Analysis and a Draft Environmental Impact Statement (DEIS) were completed for the Honolulu Rapid Transit Program with a horizon year of 2005. A Super Turnkey procurement was issued in 1991. An updated FEIS was completed in July 1992 and a Record of Decision was issued in September 1992. However, as a result of a lack of support from the City Council for the project, FTA denied funding and the project was suspended. In 2000, an Alternatives Analysis Report was developed for a Bus Rapid Transit System for the Honolulu Primary Corridor Project.

In July and August 2005, respectively, the State enabled legislation for a 0.5% General Excise Tax (GET) Surcharge and the City Ordinance enacted the GET Surcharge. Alternatives Analysis (AA) was initiated in August 2005 and the AA report was presented to the Honolulu City Council in October 2006. The four alternatives evaluated in the AA process were:

- No-Build
- Transportation System Management
- Managed Lanes
- Fixed Guideway

The assumptions made for the Fixed Guideway in the AA report were:

- System will operate from 4 a.m. to 12 a.m., with 3-10 minute headways.
- Maximum speed will be about 65 mph, in a fully dedicated right-of-way with dedicated vehicles, mainly on aerial/elevated guideway with columns in existing roadway medians, although at-grade may be possible in some areas.
- Guideway is less than 30-feet wide between stations, and approximately 50-feet plus vertical circulation at stations.
- Stations will be spaced approximately at every mile and approximately 270-feet long.

- Cost to ride will be the same as “TheBus” with transfer available from one to the other.

In November and December 2006, public meetings were held on the AA, and on December 22, 2006, the City Council selected the Fixed Guideway as the Locally Preferred Alternative (LPA). In selecting Fixed Guideway as the LPA, the City Council left some areas of the alignment open, which will be decided upon as the project progresses. These include West Kapolei, Salt Lake Boulevard vs. Airport alignment, and the Waikīkī/UH at Mānoa branches. The total LPA alignment is approximately 29-miles long.

The City Council also identified and selected a minimum operable segment (hereinafter “the First Project”) which would be built first with the current funding/revenue available. This “First Project” is a 20-mile alignment from East Kapolei, through Salt Lake Boulevard and downtown, and with an eastern terminus at the Ala Moana (Shopping) Center. The “First Project” does not include the alignment from West Kapolei to East Kapolei, or from Ala Moana Center to Waikīkī or to the UH at Mānoa.

The GET Surcharge will be a source of revenue to build the corridor project. The GET surcharge went into effect on January 1, 2007 and has a limited duration with an end date of December 31, 2022.

On July 1, 2007, the City created the Rapid Transit Division (RTD) within the Department of Transportation Services (DTS) through enactment of the City’s Fiscal Year 2008 Executive Operating Budget and Program. The RTD’s responsibilities will include project development, management and implementation. New staff members continue to be added to the City’s organization within RTD and through InfraConsult, the City’s Project Management Support Consultant (PMS). The City is planning to advertise the positions currently performed by InfraConsult, however, the PMOC has some concern that the City may encounter difficulty acquiring the experienced staff needed for the long-term assignment given Hawai‘i’s cost of living and proximity to the mainland.

On August 24, 2007, the City executed a General Engineering Consultant (GEC) contract for \$85 million with PB Americas, Inc. (PB) to perform National Environmental Policy Act (NEPA) documentation and Preliminary Engineering (PE) activities. The City combined the activities needed to support NEPA and conduct PE into the GEC contract with separate Notices to Proceed (NTPs). NTP #1, issued on August 24, 2007, is for work required to prepare a Draft Environmental Impact Statement (DEIS) and the documents required by the Federal Transit Administration (FTA) to support the City’s application to advance to PE. NTP #2 would cover the PE effort needed once the FTA has approved entry into PE. NTP #3 would be issued for the remainder of the contract work not included in NTP #1 or NTP #2. PB has started mobilization and all key managers are currently on site.

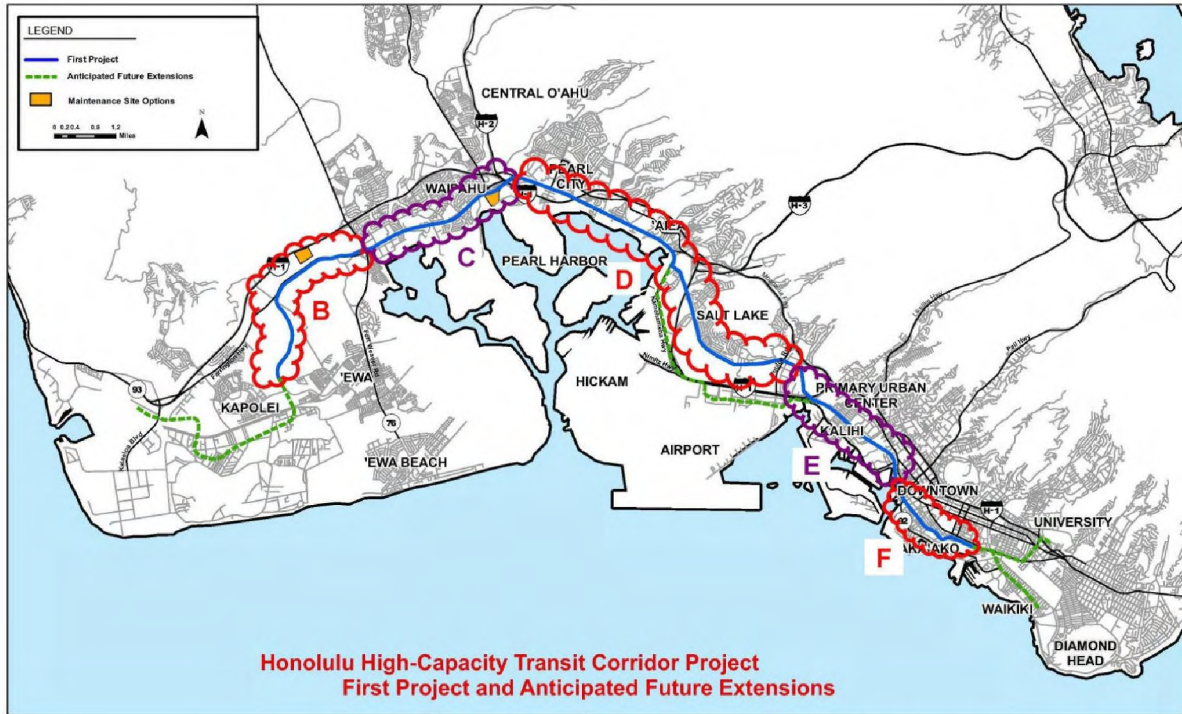
The Mayor and the City Council agreed that a Request for Information (RFI) approach was best to facilitate the selection of the Fixed Guideway Technology for the project. In December 2007, an RFI with accompanying evaluation criteria was issued and made available to all interested Fixed Guideway Technology suppliers and manufacturers. Responses from all interested parties

were due on January 24, 2008. The City, with assistance from the GEC, analyzed the RFI responses and prepared a report summarizing Technology Recommendations with all supporting data and information. On January 23, 2008, the Mayor and the City Council approved an independent Technology Selection Panel that would evaluate the RFI responses and make a technology recommendation. On February 22, 2008, the Technology Selection Panel recommended the use of steel wheel on steel rail technology for the project. Based on this recommendation, Mayor Hannemann directed DTS to base the DEIS on steel wheel on steel rail technology. As of April 23, 2008, after much discussion and several votes, the City Council was still deadlocked on a decision over which technology to employ. The Mayor has vowed to veto any measure selected other steel wheel on steel rail technology. The City is currently developing the DEIS and advancing into PE based on steel wheel on steel rail technology. At present, the City intends to request entry into PE by mid 2008.

At present, the City intends to implement the project using an incremental approach as shown in Figure 1 below. It is the City's intent to perform the Final Design and begin construction of the initial phase of the "First Project" (Phase I) after the Record of decision (ROD) is issued using a Design/Build method of delivery with local funds. Phase I is comprised of Segments B and C, and is approximately 6-miles long and includes 6 stations. The proposed limits of Phase I are from the future site of the Kroc Center development at North-South Road to the vicinity of Waipahu. Phase I is scheduled to be in operation at the end of 2012.

Phase II is comprised of the remaining limits of the "First Project", Segments D, E and F, are from Waipahu through Salt Lake Boulevard and downtown, with an eastern terminus at the Ala Moana (Shopping) Center. Phase II consists of approximately 14 additional miles and includes 13 stations. Phase II could be opened in phases as construction is completed; the final section of the "First Project" is scheduled for operation in 2017, five years after Phase I is placed into service. The City is evaluating other options, such as Phase I operations on a demonstration basis during limited hours. The City is currently developing the Master Schedule for project delivery which outlines this approach.





**Figure 1. First Project and Anticipated Future Extensions**

#### **4. REVIEW AND FINDINGS**

The Honolulu High-Capacity Transit Corridor (HHCTC) Project is scheduled to enter PE in mid 2008. Before entering PE, FTA requires projects to complete the necessary activities in the areas of transportation planning, financial management and technical capacity and capability.

This section of the report presents 1) the status of the required documents and the PMOC's overall assessment regarding the City's readiness to enter the PE phase of the HHCTC Project from a technical capacity and capability perspective; and 2) the PMOC's review of the reliability of the project scope, cost, and schedule of the Locally Preferred Alternative (LPA) prior to entry into PE.

##### **4.1. GRANTEE TECHNICAL CAPACITY AND CAPABILITY REVIEW**

In July 2007, FTA developed a list of activities ('checklist') that the City is required to successfully complete to demonstrate technical capacity and capability prior to entering into PE. The activities and overall schedule for completing these activities was formally developed with the City in June 2007. The resulting checklist identifies the following required documents (FTA deliverables) or actions:

- Project Management Plan (PMP)
- Real Estate and Acquisition Management Plan (RAMP)
- Quality Management Plan (QMP)
- Bus Fleet Management Plan (BFMP)
- Safety and Security Management Plan (SSMP)
- Third-Party Agreements Management Plan (included in the PMP)

The PMOC reviewed the various FTA deliverables as they were developed and provided by the City. The PMOC then discussed any comments, concerns or outstanding issues with the individual documents with City, and suggested ways to address the issues identified. These discussions with City resulted in the document being revised in an effort to address all the requirements necessary to advance into PE effectively.

The PMOC reviewed the organizational capability and capacity of City to oversee and manage the PE phase of the HHCTC Project in line with federal, state, and local regulations and industry best practices. The technical capacity and capability evaluation is based on the overall assessment of the documents listed above except for the Financial Plan, which is being evaluated by FTA.

The following subsections provide the status of the checklist documents. The deliverables reviewed provided a clearer understanding of the organizational structure of the City with regard to the HHCTC Project. The deliverable review was also performed to determine if the City has the appropriate management policies and procedures in place to adequately oversee and managed the project, and to verify that the City has all required documentation necessary to enter into PE in mid 2008, as currently anticipated.

*It is the PMOC's professional opinion that the City has demonstrated the technical capacity and capability to enter the PE phase of the project.* The PMOC recommends that FTA acknowledge that the City's plans meet FTA requirements for entry into PE.

#### **4.1.1. STAFFING REVIEW**

In the past year, the City has made tremendous progress in providing the staff needed to demonstrate the technical capacity and capability needed to design, construct and operate the HHCTC Project. At the start of the FTA/PMOC oversight in April 2007, the Department of Transportation Services (DTS) presented 26 staff positions for the HHCTC Project, 21 of which were filled by staff from InfraConsult, LLC, the Project Management Support Consultant (PMSC). After a review of the staffing plan in June 2007, the PMOC provided the following recommendations to the City:

- Provide a Safety Manager and a Quality Manager that are directly accountable to the City organization; and,
- Develop the capability to effectively manage consultants.

On July 1, 2007, the City formed the Rapid Transit Division (RTD) that falls under DTS. The RTD is responsible for the management and oversight of the project from PE through Construction, including all actions and project deliverables required by the FTA New Starts Program, and will interface with other City departments as needed. The RTD is headed by Mr. Toru Hamayasu, who will direct the project staff consisting of full-time City employees supplemented with staff from the PMSC, who will fill key project roles pending the hiring of full-time City staff.

The City's long term objective is to advertise city positions currently filled by the PMSC, and then have the PMSC transition with the newly hired City employee in an effort to ensure that the new hire is capable of managing the City's consultants effectively.

On June 5, 2007, the City issued a Request for Qualifications (RFQ) for a General Engineering Consultant (GEC) for PE Services, including the National Environmental Policy Act (NEPA) work. The City combined the activities needed to support NEPA and conduct PE into the GEC contract with separate Notices to Proceed (NTPs). The City executed a contract on August 24, 2007 with PB Americas, Inc (PB), and issued NTP #1 for work required to prepare a Draft Environmental Impact Statement (DEIS) and the documents required by FTA to support the City's request to enter PE. The addition of PB to the project provides the City with the ability to obtain any necessary technical expertise to complete both PE and the EIS process effectively.

Presently, the City is in the process of creating a Transit Authority. In order for the Transit Authority to be created, the City is required to have a City charter amendment submitted this election year (2008) for execution in 2010. A draft charter amendment has been developed for City review. The creation of the Transit Authority would move some planning and budget functions from DTS to the Transit Authority. Other functions of the Transit Authority are still being discussed.



Presently, the PMOC has the following concerns which will need to be addressed during the PE phase:

- The City may encounter difficulty acquiring the experienced staff needed to manage the corridor independently for the long-term assignment, given Hawai'i's cost of living and distance from the mainland.
- The RTD Quality Manager has the ultimate responsibility for the Quality Assurance (QA) and Quality Control (QC) for the project from PE through Revenue Operations, but does not currently have a significant role defined in the various project phases. The City needs to further expand the roles and responsibilities of the RTD QA Manager to include participation in QA/QC audits, reviews, inspections, testing to ensure compliance throughout the project.

#### **4.1.2. PROJECT MANAGEMENT PLAN**

FTA requires that its grantees undertaking a major capital project submit a Project Management Plan (PMP) for FTA's review and approval prior to advancing to subsequent project phases. The PMP is a key document in determining grantees' technical capacity and capability to effectively implement a major capital project.

The City submitted a preliminary draft of the PMP on June 12, 2007. The PMP needed further development to meet the FTA guidelines Section 49 USC 5327 and 49 CFR 633 Project Management Oversight, FTA Grant Management Guidelines, FTA Circular 5010.1C, and FTA Project and Construction Management Guidelines 2003 Update. The City resubmitted the PMP on September 14, 2007, and based on this submission, the PMOC and the City conducted a review/workshop on October 16, 2007 to further develop the plan prior to formal submittal. The City resubmitted the PMP on December 20, 2007, which the PMOC reviewed and provided its comments to the City in January 2008.

The final draft of the PMP was provided by the City on March 17, 2008. The PMOC provided comments to this version of the PMP on April 25, 2008, however, this PMP covers all of the requirements to be included in a PMP for entry into PE.

Further development of the PMP in the following areas will be required during the PE phase of the project:

- Proposed Transit Authority (if approved) will have to be reflected in the PMP, to include scope of authority, roles and responsibilities of key staff positions, an organizational chart, and resumes of key staff.
- Project Delivery approach to be updated during PE to reflect alignment, station locations and segment delivery methods once finalized.
- Cost, schedule and claims management sections to be expanded during PE as the requirements and the processes are further defined.
- A Document Control Plan detailing document control procedures and document filing system to be provided.
- Process for Procurement and Contracts to be expanded during PE to incorporate the roles of the GEC, General Construction Manager and Contractors at the various stages of the

project.

- Construction Management and Testing and Start-Up sections to be expanded during PE as the requirements and the processes are further defined.

The project delivery approach and methods are still being developed by the City. Based on current discussions with the City, Segments B, C and D will be Design-Build contracts while the remaining Segments will be Design-Bid-Build (See Figure 1 for Segment locations). Systems and Vehicle Contracts are currently planned as single contracts with multiple NTPs. The City is currently developing a preliminary Project Delivery Plan (white paper) detailing the proposed project delivery methods and interfaces for review by FTA and the PMOC. The white paper should be submitted for review by May 19, 2008. The City will further evaluate and project delivery methods as they progress in PE.

***Based on the review of the March 17, 2008 PMP, the PMOC recommends that FTA acknowledge, without conditions, that the PMP meets FTA requirements for entry into PE.***

#### **4.1.3. REAL ESTATE AND ACQUISITION MANAGEMENT PLAN**

FTA requires that its grantees undertaking a major capital project submit a Real Estate and Acquisition Management Plan (RAMP) for FTA's review and approval prior to advancing to subsequent project phases.

The purpose of the RAMP is to demonstrate that the City has done adequate planning to implement the right-of-way appraisals, land acquisition, relocation and property management activities for all phases of the project. These policies and procedures must also incorporate compliance requirements of state statutes and guidelines. Overall, the RAMP:

- Provides an overview of the acquisition process;
- Defines roles for the City, project personnel, consultants or subconsultants involved in all phases of the right-of-way acquisition and relocation activities;
- Outlines acquisition strategies and decision-making processes;
- Identifies coordination requirement and processes;
- Defines tasks and assigns responsibilities for those tasks; and,
- Describes the project controls that will be utilized to monitor the acquisition schedule, costs and quality control.

The City submitted an initial draft RAMP on January 3, 2008, which the PMOC reviewed the draft against FTA policies and procedures that conform to the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 as amended and the implementing regulations at 49 CFR Part 24 (collectively "the Uniform Act") and FTA Circular 5010.1C. The PMOC provided and discussed its comments with the City during a workshop held on January 16, 2008.

During the months of February and March 2008, the PMOC had several informal discussions with the City and provided informal comments on two occasions to assist the City with the development of the RAMP. H. C. Peck, as a subcontractor to the PMOC, has reviewed the final submission of the Real Estate and Acquisition Management Plan (RAMP) received April 17,

2008, which was significantly revised to address previous comments and concerns of PMOC.

After review of the RAMP, the PMOC has the following recommendations:\

- The PMOC has had ongoing concerns about the organizational structure as it relates to the real estate and relocation functions. Previous versions of the RAMP did not adequately address the reporting and working relations between key positions (Chief Land Division, Manager of Real Estate and Relocation Specialist). While the final version provides adequate descriptions of the reporting and working relationships between these positions, these key positions report to different Directors. The PMOC recommends that FTA should monitor to evaluate the effectiveness of this organizational structure as identified.
- One of the key positions identified is Manager of Real Estate. The City has identified an individual to fill this position until it can be filled permanently. When the Manager of Real Estate position has been permanently filled, the PMOC recommends that FTA review the applicant's qualifications to ensure sufficient previous experience with federally funded projects to successfully implement the project in compliance with the Uniform Act.
- The City has indicated to the PMOC that it expects to adopt the Hawai'i Department of Transportation's (HDOT) policies and procedures for land acquisition and relocation. HDOT is currently revising the policies and procedures to reflect the latest revisions to the Uniform Act Regulation Final Rule (49 CFR Part 24). The HDOT policies and procedures will be approved by the Federal Highway Administration. The City will review the policies and procedures and make any modification(s) that would be necessary to meet FTA and the City requirements. The PMOC recommends that FTA review these policies and procedures once they are in place to assure appropriate compliance.
- The City's Department of Budget and Fiscal Services will prepare a Relocation Plan prior to the Record of Decision (ROD) being issued for the Project. This Relocation Plan will become a supplement to the RAMP. Prior to any land acquisition activities that would result in displacement, the PMOC recommends that FTA review the RAMP for sufficiency.

As the project design proceeds and there is further refinement of the right-of-way plans, the RAMP will need to be modified to incorporate changes necessary to successfully complete the land acquisition and relocation activities. The RAMP is a living document and it is expected that the City will update the RAMP periodically as necessary, to maintain compliance with the Uniform Act and other regulatory requirements.

***Based on the PMOC's review of the April 17, 2008 RAMP, the PMOC recommends that FTA acknowledge, without conditions, that the RAMP meets FTA requirements for entry into PE.***

#### **4.1.4. QUALITY MANAGEMENT PLAN**

FTA requires that its grantees undertaking a major capital project submit a Quality Management Plan (QMP) for FTA's review and approval prior to advancing to subsequent project phases. The City submitted an initial draft QMP on January 3, 2008. The PMOC reviewed this draft against FTA Quality Assurance and Quality Control Guidelines, FTA-IT-90-5001-02.1, which provide quality program guidance to grantees undertaking design, construction, or equipment acquisition in the management of federally funded projects. The PMOC and the City discussed comments on the draft QMP during a workshop held on January 16, 2008.

The City submitted a revised QMP, addressing the PMOC initial comments, on April 3, 2008. The PMOC provided the City comments to this version of the QMP on April 15, 2008, however, the QMP covers all of the requirements and is therefore acceptable for entry into PE in its current version. The City should start with the current document and update the QMP as the project proceeds through the different phases and stages. The QMP should be viewed as a living document, focused on continuing improvement as the project progresses.

***Based on the review of the April 3, 2008 QMP, the PMOC recommends that FTA acknowledge, without conditions, that the QMP meets FTA requirements for entry into PE.***

#### **4.1.5. BUS FLEET MANAGEMENT PLAN**

FTA requires that its grantees undertaking a major capital project submit a Bus Fleet Management Plan (BFMP) for FTA's review and approval prior to advancing to subsequent project phases. The objective of the BFMP is to ensure that bus service is not degraded during design and construction of the grantee's rail project. The BFMP should provide a clear explanation of the current situation and operation with regards to composition of the existing bus fleet, maintenance facilities and operating conditions.

The City submitted an initial draft BFMP on June 12, 2007. The PMOC reviewed this draft and advised the City that the plan needed further development to meet the FTA's guidance on Bus Fleet Management Plans for New Starts projects dated April 8, 1999 and Guidance for Financial Plan Development issued in June 2000. The PMOC and the City discussed comments on the draft BFMP on June 13, 2007, and the City resubmitted a revised BFMP on January 03, 2008, however, the plan did not address a number of the PMOC comments. After further discussions with the City on January 15, 2008 and formal review comments transmitted on January 23, 2008, the City resubmitted the BFMP on April 4, 2008, which incorporated the PMOC's review comments and addressed the FTA requirements for development of a BFMP.

Based upon PMOC review of the revised BFMP submitted on April 4, 2008, the plan now provides sufficient data, discussion and documentation in the following areas:

- Peak levels of service by year with the number of vehicles required while satisfactorily meeting FTA requirements for spare ratios
- Fleet average age, composition, vehicle requirements and purchase plan
- Current and projected bus ridership using load factor policy
- A description of maintenance facilities, practices and procedures to maintain and adequately address the existing and expansion of the fleet



- Service quality and reliability measures including but not limited to vehicle reliability
- Load factors and on time performance
- A projected annual project which coincides with the financial capacity review.

***Based on the review of the April 4, 2008 BFMP, the PMOC recommends that FTA acknowledge, without conditions, that the BFMP meets FTA requirements for entry into PE.***

#### **4.1.6. SAFETY AND SECURITY MANAGEMENT PLAN**

FTA's New Starts program requires that each project receiving FTA funding develop a Safety and Security Management Plan (SSMP) for submittal to FTA. FTA has issued Guidelines for SSMPs contained in Circular 5800.1, issued on June 21, 2007 and into effect as of August 1, 2007, to guide grantees in developing these documents.

The PMOC held a workshop with the City on October 17, 2007 to review the updated FTA requirements for the development of the SSMP. The City submitted a draft SSMP on January 3, 2008, and the PMOC discussed its review and comments to the plan with the City on January 16, 2008, with formal review comments transmitted on January 23, 2008.

The City completed and submitted a final draft of the SSMP on March 11, 2008. The PMOC used the FTA guidelines checklist to evaluate the SSMP for readiness to enter into PE and provided comments to the City on April 15, 2008.

Based on this review, the PMOC feels that the following items should be incorporated into the SSMP prior to entering into PE:

- The SSMP policy statement should include a statement on completing a safety and security certification program. Safety and security certification forms the foundation for all safety and security activities contained in the SSMP and should be identified in the policy statement.
- The City indicated that the Mayor of Honolulu will sign and approve the SSMP policy statement. By having the Mayor sign the policy statement, all City agencies will be committed to the provisions contained within the SSMP. In addition to the Mayor's sign-off on the policy statement, five City department heads will be required to sign a 'statement of commitment' to the SSMP. The signers are intended to be:
  - ▶ Project Executive Director, RTD
  - ▶ Fire Chief, Honolulu Fire Department
  - ▶ Chief of Police, Honolulu Police Department
  - ▶ Director, City of Honolulu Department of Emergency Management
  - ▶ Director, City of Honolulu Emergency Services Department
  - ▶ Director, City of Honolulu Department of Transportation Services.

These signatures should be obtained for the Plan prior to entering into PE.

***Based on the review of the March 11, 2008 SSMP, the PMOC recommends that FTA***

***acknowledge, without conditions, that the SSMP meets FTA requirements for entry into PE.***

The SSMP is currently being reviewed/signed by the departments listed above. Due to this review process, the PMOC will need to revisit the SSMP once the document is final.

#### **4.1.7. THIRD-PARTY AGREEMENTS MANAGEMENT PLAN**

The Third-Party Agreement Management Plan is in the initial stages and is currently included in the PMP. As third-party agreements are established and negotiated during PE, a separate Third-Party Agreements Management Plan will be developed during PE for review.

The City has begun coordinating with third-party agencies to determine the scope of work associated with each agency. The initial utilities identified include:

- Public Utilities – Water Supply Force Main, Stormwater & Wastewater Pipelines, Sewer
- Private Pipeline Utilities – Gasco, Tesoro, Chevron
- Hawaiian Electric Company (HECO) - High Voltage Transmission Lines (above ground and oil cased underground)
- Hawaiian Telecom
- Private Communications
- Military Communications
- Navy Fuel lines

The City is presently completing their utility mapping, and once complete would proceed with a verification for the utilities locations. Utility relocation plans are presently in the preliminary plans, however the City is evaluating including the utility relocation in the Design-Build contracts for the initial segments as there would be no time for the City to perform the utility relocations prior to the anticipated December 2009 ROD. Early relocation of utilities for Segments D, E and F are currently being evaluated. At present, the City does not expect any major problems with sewer or water utilities along the project, as the alignment does not impact any major lines.

***Based on the review of the third-party agreement plan as part of the March 17, 2008 PMP, the PMOC recommends that FTA acknowledge, without conditions, that the third-party agreement plan meets FTA requirements for entry into PE.***

#### **4.1.8. FINANCIAL PLAN**

FTA requires a Financial Plan be submitted by grantees as part of the New Starts process. On December 4, 2008, the City submitted the Financial Plan to FTA for review and acceptance. The Financial Plan is currently under review by FTA and their Financial Management Oversight (FMO) contractor.

#### **4.2. PROJECT STATUS**

This section of the report documents the PMOC's review of the reliability of the project scope, cost, and schedule of the Locally Preferred Alternative (LPA) prior to entry into PE. The HHCTC Project is in the Pre-PE stage. The final Alternatives Analysis (AA) Report on the LPA

has been completed and accepted by FTA and the DEIS is in the preliminary stages of development. The project guideway and station locations are being finalized, however structural alternatives for the guideway and stations are still being evaluated in order to further define the scope of project.

The current project cost estimate is in FTA's Standard Cost Category (SCC) format and is based on the Alternative Analysis conceptual drawings updated to 2007 dollars. An updated cost estimate is anticipated in October 2008 following completion of the DEIS by the City.

The project schedule is also in the preliminary stages of development. The EIS and PE activities are the most detailed in the preliminary schedule, however the City is still analyzing the project delivery approach and incorporating the utility coordination and real estate acquisition activities.

Based on meetings and workshops with the City management and staff, documentation reviews, and site visits and tours, ***the PMOC recommends that the City be granted entry into PE in order to continue the development of the project scope, cost and schedule.***

#### **4.2.1. PROJECT SCOPE**

Alternatives Analysis (AA) was initiated in August 2005 and the AA report was presented to the Honolulu City Council in October 2006. In November and December 2006, public meetings were held on the Alternatives Analysis, and on December 22, 2006, the City Council selected the Fixed Guideway as the Locally Preferred Alternative (LPA), with the selection also including the alignment of the project. The four alternatives evaluated in the AA process were:

- No-Build
- Transportation System Management
- Managed Lanes
- Fixed Guideway

The Locally Preferred Alternative (LPA) selected is a twenty-nine (29) mile elevated fixed guideway system along O`ahu's south shore between Kapolei and the University of Hawai'i (UH) at Mānoa, including a spur to Waikīkī. The proposed "First Project" constitutes the minimum operating segment (MOS) and is a 20-mile route between East Kapolei and Ala Moana Center via Salt Lake Boulevard with 19 stations, and does not include the alignment from West Kapolei to East Kapolei, or from Ala Moana Center to Waikīkī or to the UH at Mānoa.

In selecting Fixed Guideway as the LPA, the City Council left some areas and portions of the alignment open, which will be decided upon as the project progresses. These include West Kapolei (one alignment was longer than the other, although it passed through more populated/developed areas), Salt Lake Boulevard vs. Airport alignment, and the Waikīkī/UH at Mānoa branches. The City is currently including both the Salt Lake Boulevard and the Airport alignments in the DEIS for a total project alignment of 34 miles. Initial fleet size is anticipated to be 66 vehicles.

The "First Project" is divided into two Phases. Phase I of the "First Project" alignment is

approximately 6-miles long and includes 6 stations. The proposed limits of Phase I are from the future site of the Kroc Center development at North-South Road to the vicinity of Waipahu. Phase II encompasses the remaining 14 miles and 13 stations.

Conditions for selecting the LPA Alignment included:

- The west terminus of the alignment is at East Kapolei, where there are plans for significant future development (UH West O'ahu and State Department of Hawaiian Home Lands);
- Serving Waipahu, which is primarily a highly dense residential area with some commercial development along the main road;
- Serving the Pearl Harbor area and Aloha Stadium;
- Serving the Salt Lake Boulevard area, which is highly residential and currently very congested, with several areas of very dense development including commercial/business/residential land uses. Serving this area is critical due to a growing population (currently  $\pm 950,000$ ) and an expected growth of an additional 250,000 to 350,000 by the year 2030.
- Serving downtown Honolulu and Kalihi, both of which are high-density commercial and residential areas, including two community colleges.

The assumptions made for the operation of the Fixed Guideway in the AA report were:

- System will operate from 4 a.m. to 12 a.m., with 3-10 minute headways.
- Maximum speed will be about 60 mph, in a fully dedicated right-of-way with dedicated vehicles, mainly on aerial/elevated guideway with columns in existing roadway medians, although at-grade may be possible in some areas.
- Guideway is less than 30-feet wide between stations, and approximately 50-feet plus vertical circulation at stations.
- Stations will be spaced approximately at every mile and approximately 270-feet long.
- Cost to ride will be the same as "TheBus" with transfer available from one to the other.

In conjunction with AA, an initial scope was developed for the project, which included preliminary alignment development reflecting all alternatives, typical sections for the guideway and structures (both elevated and at-grade), typical station design, and a preliminary cost estimate.

In the last year, the City's General Engineering Consultant (GEC), PB Americas, Inc (PB) has held several workshops in advance of PE in an effort to determine the most effective alternatives for execution of the project. These workshops allow the GEC to analyze and evaluate structural and geotechnical options for both the guideway foundations and the aerial structure and architectural alternatives for the stations, as well as station area interface and design to maximize circulation. The workshops also address project constructability and systems interface. The GEC has also undertaken and completed several environmental studies, performed initial soil boring testing, studied alignment refinements including station and support facility locations.

During PE, the City will continue to evaluate alternatives and perform additional testing in an effort to further define the project scope. Public meetings with the various affected communities will be held to finalize the station characteristics and interface with the local communities.



#### **4.2.2. PROJECT PRELIMINARY DESIGN**

With regard to staffing support for Preliminary Design, the GEC has technical capability and capacity to evaluate the various options required to produce a complete set of preliminary design documents and to perform the preliminary design requirements for the HHCTC Project. Further development of the City's fleet size, station platform lengths, track configurations, signal, power and communications systems, and maintenance facilities to operate and accommodate ridership in the twenty-five year forecast will be performed during the PE phase of the project.

#### **4.2.3. PROJECT CAPITAL COST**

The current project budget is based on the preliminary AA cost estimate, which reflects the conceptual design and has simply been brought into current 2007 year dollars. In May 2007, the PMOC conducted a Cost Validation Analysis based on the information provided by the City in the Final Capital Costing Memorandum, Product 8.5 – Honolulu High-Capacity Transit Corridor, Alternative Analysis/Draft Environmental Impact Statement, dated October 23, 2006 (630 pages, prepared by Parsons Brinkerhoff Quade and Douglas). This costing memorandum document provided detailed cost estimates, including unit costs and quantities, for each project alternative by alignment and segment.

A Top-Down Cost Validation and a Unit Cost Validation analysis were performed to determine cost estimate reasonability in total and for each of the ten major FTA Standard Cost Categories (SCC). The Top-Down Cost Validation used FTA's Light Rail Capital Cost and Heavy Rail Capital Cost Databases, sources which document the as-built costs and project characteristics for close to fifty U.S. rail transit investments. These databases were used to identify where the cost of specific SCC cost elements for the Honolulu High-Capacity Transit Corridor Project may differ materially from past experience. The analysis then considered the potential reasons for these cost variations.

The Unit Cost Validation was conducted by comparing the project's unit cost estimates for concrete, steel, and other primary materials with mainland costs for these same items, each adjusted to correct for regional cost differences (using sources such as RS Means, U.S. Army Corps of Engineers, Department of Defense, etc.). The unit cost validation also compared and contrasted project unit cost assumptions with actual unit costs from recently completed major capital projects in the Honolulu metro region.

A key challenge in conducting this cost reasonability analysis was the lack of a defined project technology and modal definition. Given this lack of specificity, the current project costs were assessed using against the historical, as-built cost experiences of both light and heavy rail projects. The Top-Down Analysis revealed that the project costs exhibit the cost characteristics of both light and heavy rail projects; with some elements having cost characteristics more similar to light rail (e.g., stations and vehicles) and others more similar to heavy rail (most notably aerial structure).

In summary, the cost validation analysis determined that the total project cost estimates are reasonable for Pre-PE, falling marginally below the expected cost based on recent U.S. light and

heavy rail projects. However, when the variance analysis is limited to “hard asset” costs alone, including track and structures, facilities, systems, stations, and vehicles, project cost estimates are found to marginally exceed the database predicted costs quite reasonable for a pre-PE project. In contrast, the combined project cost estimates for special conditions, ROW, and soft-costs were found to be lower than expected based on prior project experience as represented in the database.

Overall, the unit cost estimates for the HHCTC Project were generally found to be similar to or within acceptable ranges to those derived from other existing sources, and hence should be considered reasonable at this stage of the project. Finally, the provisions for contingencies were found to be adequate and appropriate for a project in the pre-PE phase. Also, the assumed inflation rates used to adjust project costs from 2007 dollars to Year-of-Expenditure (YOE) dollars were found to be reasonable but not conservative, based on recent cost inflation for construction projects nationally and local Honolulu consumer cost inflation.

The current project cost estimates (including those presented in the SCC format) do not include any provision for Finance Charges. However, the November 2007 Financial Plan provided further detail of the finance charges applied through the last year of construction in 2018 and extended through 2030. The 2007 Capital Cost Summary as listed in the November 2007 Financial Plan is shown below.

**Table 1. Capital Cost Summary**

	<b>Capital Cost</b>	
	<b>Millions 2007 Dollars</b>	<b>Millions YOE Dollars</b>
<b>Excluding Finance Charges</b>	\$3,727	\$4,684
<b>Including Finance Charges through 2018</b>	\$3,918	\$4,940
<b>Including Finance Charges through 2030</b>	\$4,041	\$5,123

As the project scope is further developed during the DEIS and PE process, the City anticipates completing an updated cost estimate for review in October 2008.

#### **4.2.4. PROJECT RISK**

It is still early in the project to adequately identify specific areas of risk for the project. The project scope is being determined at this time, and the guideway alignment and station locations are being finalized. In addition, the project schedule is still in development and the project budget is based on the Alternative Analysis conceptual design.

In May 2007, the PMOC performed a Cost Validation Analysis of the project costs developed on the basis of the conception design performed during Alternative Analysis. As a part of the Cost Validation Analysis, the PMOC reviewed potential cost risks and identified cost elements that either may be missing from the current estimates or which may benefit from further refinement, to reduce cost risk. Following are some of those items that may pose real cost risks to the project and hence deserve further attention during PE:

- **Utility Relocation** - The last comprehensive utility assessment for buried utilities was performed in 1991 and consisted largely of a review of city utility maps. The current project estimate consists of updated relocation costs applied to the 1991 assessment data. Hence, there is risk that the current cost may be too low, suggesting the need for an updated utility assessment. Also, private utility relocation costs are assumed to be split 90/10 (project/private). The fact that the utility company bears any cost reduces the incentive perform the relocations promptly, increasing the likelihood the project may bear 100% of the relocation cost in order to maintain schedule.
- **Real Estate Acquisition and Relocation** – At present, the City continues to refine the alignment right-of-way along with location of stations and support facilities. The City is beginning to identify land parcels affected by the project including station touchdown locations, park-and-ride facilities and construction access and lay-down areas. Because much of the data used in the City's development of the project budget relies upon analysis completed in 1991, all real estate costs, including relocation costs, will be re-estimated once all effected parcels are identified.
- **Environmental Mitigation Requirements** – Again, once the City determines the final location of the alignment along with station locations and support facilities, further environmental studies will be necessary to determine the full extent, if any, of the environmental mitigation necessary to complete the project.
- **Sub-surface Soil Conditions (Geotechnical)** – Because of the differing nature of the subsurface soils in along the alignment, further geotechnical studies will be necessary during PE to determine foundation locations and types.

All risks identified above will require further testing and evaluation during the PE phase of the project in order to further define the scope of the project and therefore the project budget. The City will evaluate some of the risks identified during the DEIS prior to submittal of the next scheduled project cost estimate.

#### 4.2.5. PROJECT SCHEDULE

The Master Schedule for delivery of this project continues to remain in the development stage. The EIS and PE activities have a significant level of detail and are the most developed, however the remaining sections of the schedule require significant refinement for the schedule to be complete. The following is a summary of the January 2008 schedule of milestone activities provided by the City:

**Table 2. Summary of January 2008 Schedule of Milestone Activities**

Activity Description	January 2008 Schedule	Actual
RFQ – Advertise	06/05/2007	<b>06/05/2007</b>
RFQ – Contract Award (NTP#1)	08/24/2007	<b>08/24/2007</b>
Start Vehicle Procurement	12/05/2007	<b>12/05/2007</b>



Select Vehicle Technology	03/12/2008	
Start Preliminary Engineering (NTP #2)	06/01/2008	
Release DEIS	09/19/2008	
Start Utility Relocation	Mid 2009	
Start Right-of-Way Relocation and Acquisition	Mid 2009	
Issue Procurement - Phase I Design/Build	10/2008	
Release FEIS	06/22/2009	
Record of Decision (ROD)	08/04/2009	
Issue NTP for Phase I Design/Build	10/2009	
Start Phase I Construction	12/31/2009	
NTP for Transit Vehicles	02/2010	
Enter FD - Phase II	2 <sup>nd</sup> Qtr 2010	
FFGA	2 <sup>nd</sup> Qtr 2011	
Start Remaining Construction	3 <sup>rd</sup> Qtr 2012	
Complete Phase I Construction	Mid 2013	

Based on the current schedule, request to enter PE is anticipated by June 1, 2008, Record-of-Decision (ROD) on August 4, 2009, start of construction for Phase I (Segments B and C) by December 31, 2009, Revenue Service for Phase I by December 2012, starting of construction for Segment D in mid 2016, followed by Segment E in January 2017 and Segment F by mid 2017, which is five (5) years after the first phase is operational.

At present, the City is planning the start of construction for Segments B and C to begin in December 31, 2009. There is a possibility that Segment D would also begin around the same time. If both segments are constructed at the same time they will both be bid as Design-Build.

The City is currently developing the Draft Environmental Impact Statement (DEIS). The project schedule has the DEIS being available in September 2008 and the Final Environmental Impact Statement (FEIS) in June 2009.

The City is performing several tasks in an effort to further define the project scope and, as a result, the project schedule. The City is currently preparing plan and profile drawings, identifying right-of-way for the guideway, stations and ancillary facilities, and identifying traffic lane impacts on roadways adjacent to the proposed alignment. The City has also began utility coordination environmental studies, foundation and aerial structural analysis in order to determine the most effective alternatives for execution of the project.

#### **4.2.6. PMOC CONCERNS**

At present the PMOC has the following concerns which will need to be addressed during the PE phase:

- The project scope needs to be further detailed in order to develop a complete project schedule.
- Technology selection actions between the Mayor, the City Council and anti-rail critics.

- The overall project schedule continues to be exceedingly optimistic with groundbreaking by December 31, 2009 and Phase I opening for revenue service by 2012. However with the availability of GEC staff, it is possible for the City to achieve the dates provided.
- The Real Estate Acquisition and Relocation schedule has not been defined and could potentially impact the current critical path identified. Development of the Master Schedule should further define schedule activities and begin to identify critical path activities and associated milestone dates.
- Interface between facility and systems contracts, specifically if the systems contract are procured in different parameters than the facility contracts. The City needs to finalize project procurement methods for facility, systems and vehicle contracts and apply realistic durations for each contract into the project schedule to determine any schedule future conflicts.

As of April 21, 2008, an anti-rail group announced that they will attempt to collect the 44,535 signatures from registered voter needed by August 1, 2008 to place a measure on the November 2008 ballot that proposes a City Ordinance which reads, "Honolulu mass transit shall not included trains or rail." The PMOC will continue to monitor this effort. Should this anti-rail group succeed, it could significantly delay the project.

## 5. CONCLUSIONS AND RECOMMENDATIONS

The Honolulu High-Capacity Transit Corridor project is scheduled to enter Preliminary Engineering (PE) in mid June 2008. This report addresses the PMOC's review of the organizational capability and capacity of City to oversee and manage the PE phase of the HHCTC Project in line with federal, state, and local regulations and industry best practices, as well as the overall status of the HHCTC Project with regards to scope, cost and schedule.

The PMOC evaluated the project development and the submission of documents necessary for entry into PE. These form the basis for the PMOC opinion on the City's technical capacity and capability to enter PE. It is the PMOC's professional opinion that the City has demonstrated the technical capacity and capability to enter the PE phase of the HHCTC project. The PMOC recommends that the following deliverables be accepted by FTA, without condition:

- Project Management Plan (PMP)
- Real Estate Acquisition and Management Plan (RAMP)
- Quality Management Plan (QMP)
- Bus Fleet Management Plan (BFMP)
- Safety and Security Management Plan (SSMP)

Based on meetings and workshops with the City management and staff, documentation reviews, and site visits and tours, ***the PMOC recommends that the City be granted entry into PE in order to continue the development of the project scope, cost and schedule.***

Going forward the PMOC recommends the following items continue to be monitored as the project moves into PE:

- Technology selection progress – Monitor City Council and local transit opponents' actions.
- Update of the PMP to include the proposed Transit Authority, if approved, including scope of authority and roles and responsibilities of key staff positions.
- Further definition of the project scope, final alignment, maintenance yard location, station locations and support facilities.
- Evaluation and development of the project delivery approach and methods for the procurement of utility, facility and system contracts.
- Implementation and update of the RAMP, SSMP and QMP as the project progresses.
- Third-party negotiations and agreements for utility relocations.
- Development of the Project Master Schedule and progress of activities.